DISCUSSION

February 9, 2017

Subject: **UrbanFootprint: Release of Public Version**

Reporting Period: December 2016 – February 2017

Staff Lead: Mike McCoy, Strategic Growth Council

Recommended Action:

For information only – no action required.

Summary:

A free, public, open-source version of UrbanFootprint is now available from the Strategic Growth Council website. UrbanFootprint is a powerful land use planning, modeling, and data organization framework designed to facilitate more informed planning by practitioners, public agencies, and other stakeholders.

Anyone with Geographic Information System skills – a person most counties and regions, and many cities have – can now easily install their own copy.   Once installed, planners can explore the effects of alternative city, county and regional land use plans by quickly changing the locations and densities of proposed residential, commercial, and industrial land use types and examining the effects of different choices on a wide range of variables. Variables include:

- transportation demand
- greenhouse gas emissions
- local fiscal impacts
- water consumption
- building energy use
- household energy and transportation costs
- natural resource impacts
- public health

Planners, together with elected officials and the public, can experiment with stakeholder ideas about land uses in a fraction of the time and cost usually associated with alternatives analysis.

How is UrbanFootprint Being Used?

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is currently using UrbanFootprint in their regional planning efforts. SCAG, in collaboration with fourteen cities, is using the software to visualize individual city General Plans in the context of regional Sustainable Community Strategies, in order to help inform their decision-making.

The City of Elk Grove

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The City of Elk Grove is using UrbanFootprint in their General Plan Update. Elk Grove has made use of the scenario generation capabilities of UrbanFootprint to explore multiple alternatives for 2040 forecast with stakeholders and officials. They report an ability to explore many more alternatives in significantly less time than has been the case in traditional planning exercises.

Next Steps:

SGC staff will now begin to reach out to other jurisdictions to introduce them to UrbanFootprint and its possibilities.

The first step is the roll-out of a web site describing the tool and offering free downloads of the software and all supporting documents. Jurisdictions, consulting firms, and programmers with public service interests that review this material and express an interest will be brought together to begin an open source collaborative support group that will create a network of mutually supportive partners.

The second step will be the implementation of an UrbanFootprint training curriculum developed and tested by the University of California, Davis. The target audience for this training will be public jurisdictions, private consultants, and educators who can implement, disseminate, and engage in community support of UrbanFootprint.

History of UrbanFootprint:

In 2008, Calthorpe Associates of Berkeley, California had demonstrated a methodology for synthesizing the research literature on the relationship of land use patterns to their impacts on subjects of interest to the state.

Due to the unique opportunities presented by high speed rail to reduce vehicle miles traveled and shape positive growth patterns, Calthorpe's work was further advanced through funding from the High Speed Rail Authority, and resulted in a spreadsheet tool called RapidFire. RapidFire processed numerical input of types, sizes, spatial distances, and other data associated with development, and estimated their impacts.

RapidFire was a satisfactory demonstration of the integration of research to estimate complex impacts but it lacked any "real world" interface that allowed visualization of spatial relationships and easy manipulation of the locations of land uses. It was proposed that creating a more robust, map based version of Rapid Fire would allow for easy visualization of land use choices, promote involvement by non-technical interests, and create the opportunity for rapidly developing and analyzing land use scenarios. The Strategic Growth Council agreed to fund this effort.

A "rough" first edition of this system was presented in June, 2012. UrbanFootprint version 1.0 was capable of all the land use and impact calculations required, but did not function as well as anticipated. It lacked an easy to use interface, simple installation patterns, and an easy interface to regional transportation modeling efforts, among other refinements.

Two of California's largest Metropolitan Planning Organizations, the Southern California Association of Governments and the Sacramento Area Council of Governments, saw the

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promise of this technology and offered to fully fund and work with Calthorpe Associates to develop the refinements needed to make this a practical tool tailored to the needs of Sustainable Communities Planning. The SGC played a supportive and facilitation role in this process.

Four years of collaborative research, experimentation, and practical testing by the MPOs, Calthorpe Associates, the University of California Davis, and the SGC led to the completion of UrbanFootprint version 1.5.

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